ABSTRACT
Hyperlipidemia is a major metabolic disorder vastly seen in this era of modernization, fast life, stressful life, fast foods having high calories and also having every comfort of living and not doing any kind of physical activity. It is an abnormal condition of elevation of lipids in blood. These metabolic derangements are considered as the risk factors for Atherosclerosis. Fifty percent of the population has an increased plasma lipid level, resulting in increased risk of coronary heart disease 20% in men aged 20 to 50 years of age and 30% in women aged 20 to 60 years of age. Incidence is higher in men than in women. According to Ayurveda it can be closely correlated to Asthayee Meda Vruddhi. In this study 30 patients with confirmed diagnosis of Hyperlipidemia were administered Gomutrabhavit Vyoshadi Guggul and assessment was done for both subjective and objective criteria. From the statistical analysis, it was evident that after completion of treatment 4 patients showed complete cure 25 patients showed markedly improvement and 1 patient showed improvement in all parameters of assessments.

Key words: Hyperlipidemia, Gomutrabhavit Vyoshadi Guggul, Asthayee Meda Vruddhi.

INTRODUCTION
Modernization, industrialization and sedentary habits along with the changes in the food habits are causing accumulation of Meda (fatty tissues) in the body. Fast foods which has become a fashion and a necessity due to the shift duties at work places have least nutritive values but are responsible for accumulation of fats in the body hence one can find many overweight people in such setups. Even the school going children are indulging in the habit of consumption of fast food hence many children of adolescent age are overweight in metro metropolitan areas. Craze for electronic games computers and television further leads to lack of exercise and faulty food habits leading to increase in weight which further increases predisposition to various ailments like lifestyle disorders i.e. hypertension, ischemic heart disease, diabetes etc. The precursors of this adipose tissue i.e. cholesterol, triglycerides, fatty acids and their different factors which circulate in the circulatory system are comparable with the Asthayee Meda Dhatu as both the
descriptions match each other. It is also interesting to note that these fatty fractions largely depend on the condition i.e. healthy or diseased state of kidney and suprarenal gland which are considered as the Moola Sthans (the origin) of the Meda Dhatu (fatty tissues).

By the above analysis Hyperlipidemia stands out to be a major life threatening condition. Hence measures for its effective control should be of the highest priority. Therefore it was decided to study the subject and find out cost effective and natural remedy for this ailment.

Due to advancement of medical technologies many new diseases have come in front of medical science may be one cannot find its correlation directly in the Ayurvedic Samhitas.

There is a need to develop a herbal formulation which breaks the pathological process of Hyperlipidemia, prevent its complication and also which is cost effective. One of the formulations mentioned by Bharat Bhaisajya Ratnakar is Vyoshadi Guggul and Bhaishajya Ratnavali calls it as Navak Guggul is one of the best drug used in Meda Vikruti (deformation of fatty tissues). Thus Gomutra has been added in order to enhance the properties of the trial drug. Thus the present study has been undertaken to judge the efficacy of Gomutra Bhavhit Vyoshadi Guggul in Asthayee Medo Vruddhi.

Aims and Objectives:
- To evaluate the effect of Gomutra Bhavhit Vyoshadi Guggul in the Management of Hyperlipidemia.
- To study the probable mode of action of Gomutra Bhavhit Vyoshadi Guggul.

Materials and Methods:

Materials taken for the study was Gomutra Bhavhit Vyoshadi Guggul. It was prepared in Rasashala of Y. M. T Ayurvedic College & Hospital.

Sampling:
30 patients with confirmed diagnosis of Hyperlipidemia were chosen randomly from Outdoor Patient Department (OPD) and Indoor Patient Department (IPD) of Y. M. T Ayurvedic Medical College & Hospital Kharaghar Navi Mumbai.

Ethical Clearance:
Institutional Ethics Committee (IEC) approval was obtained and written consent was taken from the patients prior to the initiation of the study.

Research Design: Single blind clinical study.

Diagnostic criteria
- The patients whose lipid profile shows following values were considered for the study.
  1. Total cholesterol > 250 mg/dl
  2. Triglycerides > 150 mg/dl
  3. HDL Cholesterol < 40 mg/dl
  4. LDL Cholesterol > 100 mg/dl
  5. VLDL Cholesterol > 30 mg/dl
  6. CHOL/HDL Ratio > 5
  7. LDL/HDL Ratio > 5.5

Inclusion criteria:
- Patients irrespective of sex, between 18 to 75 years of age.
- Patients diagnosed on the basis of criteria mentioned earlier in diagnostic criteria were included in the study.
- Willing to sign the consent for study participation.

Exclusion criteria:
- Patients having age < 18 yrs and > 75 yrs.
- Any generalized disorder like hormonal imbalance, carcinoma anywhere in the
body, immunocompromised patients etc were excluded

- Renal Parenchymal diseases.
- Acute and chronic cardiac conditions
- Pregnant ladies, lactating mothers, women taking contraceptives.
- Hypertensive patients on anti-hypertensive drugs and anti-coagulant therapy.

Criteria for Assessment
Objective Criteria
- Lipid profile every month till 6 months.

Subjective criteria - table no 1

Investigations:
- Lipid profile after every month for six months
- BSL Fasting and Post Prandial before treatment

Selection of the drug/medicines-
The contents of Gomutrabhavit Vyoshadi Guggul along with proportion are placed at Table 2

Thus Gomutra has been added during triturating in order to enhance the properties.

Methodology
Drug, dosage and duration: Posology is mentioned at Table 3

Observations
In the present study, a total number of 30 patients were registered, and all patients completed the treatment. Out of 30 patients, 4 patients (13.33) showed complete cure, 25 patients (83.33%) showed markedly improvement and 1 patient (3.33%) showed improvement in all parameters of assessments. It was observed that 17 patients (56.69%) were males and 13 i.e (43.33 %) were females and 21 patients (70%) were taking mixed diet where as 9 patients (30%) were vegetarians. It was observed that 13 patients (43.33) were in obese group, 10 patients (33.33%) were in overweight group and 7 patients (23.33%) were within limit.

Results
Effect on Biochemical Parameters: Table no. 4

Effect on clinical symptoms: By using Mann Whitney Rank Sum test.

In the 30 patients using Mann Whitney Rank Sum Test the symptoms

- Swedhakikya has started showing the statistical significant difference i.e. P is 0.038 from day 91 of study which is continued till the end of the study .At the end of the study T value 666.500 and the corresponding P- value is <0.001 which is statistically significant.
- Hridrava has started showing the statistical significant difference i.e. P is 0.005 from day 121 of study which is continued till the end of the study .At the end of the study T value 713.000 and the corresponding P-value is <0.001 which is statistically significant.
- Shwaskruchata has started showing the statistical significant difference i.e. P is 0.048 from day 121 of study which is continued till the end of the study .At the end of the study T value 713.000 and the corresponding P-value is <0.001 which is statistically significant.
- Daurgandhya has started showing the statistical significant difference i.e. P is 0.001 from day 151 of study which is continued till the end of the study .At the end of the study T value 735.000 and the corresponding P-value is <0.001 which is statistically significant.
- Atitrushna has started showing the statistic-
al significant difference i.e. P is 0.027 from day 136 of study which is continued till the end of the study. At the end of the study T value 765 and the corresponding P-value is <0.001 which is statistically significant.

- **Atishudha** has started showing the statistical significant difference i.e. P is 0.015 from day 136 of study which is continued till the end of the study. At the end of the study T value 765 and the corresponding P-value is <0.001 which is statistically significant.

- **Alasya** has started showing the statistical significant difference i.e. P is 0.002 from day 166 of study which is continued till the end of the study. At the end of the study T value 765 and the corresponding P-value is <0.001 which is statistically significant.

- **Nidradhikya** has started showing the statistical significant difference i.e. P is 0.001 from day 166 of study which is continued till the end of the study. At the end of the study T value 765 and the corresponding P-value is <0.001 which is statistically significant.

- **Daurbalya** has started showing the statistical significant difference i.e. P is 0.026 from day 151 of study which is continued till the end of the study. At the end of the study T value 806 and the corresponding P-value is 0.010 which is statistically significant.

**DISCUSSION:**

All the drugs present in the study are *kapha vata shamak* (pacification of kapha and vata) having *deepan* (appetizer), *pachan* (digestion), *lekhan* (scraping) and *vatanuloman karma*. As *Agnimandya* (digestive weakness) is the first step involved the *katu rasa* (pungent), *ushna virya* (warm potency) and *katu vipak* (post digestion effect) will definitely relieve this *Agni mandya* (digestive weakness). *Ushna veerya* (warm potency) acts as *pachak* (helps in digestion) and causes *vilayan* of *strotas*. *Medovaha strotodush-ti* and *dhatvagnimandya* are the key points of pathogenesis thus *ruksha* (dry), *ushna* (hot) and *kaphahar* properties of the drug pacifies *Medovaha strotodushti*. *Katu rasa* acts as *deepan* *pachan* and do *stotovivaran* and relieves *Meda dhatvagnimandya* the drug has potent *lekhan* properties which will cause scraping of accumulated *vikrut meda* and will cause *upashaman* of *lakshan* (pacification of symptoms).

*Maricha* and *guggul* causes *chedan* (perforate) and will remove *shlishta kaphadi doshas* from the body. *Triphala* will do *lekhan* and *shoshan* of *vikrutas meda*, *trikatu* will act as *deepan*, *pachan* and *lekhan dravya*, *trimada* and *guggul* will act as *lekhan* and *Medohar dravya*. *Gomutra* has *katu tikta ushna virya* and *katu vipak* ,thus it has catalyst type of action and classically it is described in treatment of *Medovruddhi*.

**CONCLUSION:**

- **Asthayee medo vrudhhi** can be considered as Ayurvedic analogue of Hyperlipidemia.

- Excess indulgence in oily and fatty food, urbanization and sedentary life style, *manas hetus* (stress) play a major role in etiopathogenesis of *Asthayee Medo Vruddhi*.

- As there is no separate entity as *Asthayee Medo Vruddhi* is mentioned in classical text. *Dushta hetu, lakshana* (symptoms) and *chikitsa sutra* of *medovaha strotas* were taken into account and were considered as a key point for evaluation of symptoms and initiation of treatment.
Lack of safe and effective treatment in modern science demands few global acceptance of Ayurvedic treatment.

In the present study after statistical analysis Gomutra bhavit Vyoshadi Guggul has shown statistically significant result in all the parameters.

Probable mechanism of action of the drug is combined effect of each of its ingredients. Drug can be safely used as none of the patients showed any untoward or adverse effect.

REFERENCES


Table no. 1

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Symptom</th>
<th>Grade 0 (normal)</th>
<th>Grade 1 (mild)</th>
<th>Grade 2 (Moderate)</th>
<th>Grade 3 (Severe)</th>
<th>Grade 4 (Extreme)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Swedadhikya</td>
<td>Sweating after heavy work and fast movement or in hot season.</td>
<td>Profuse sweating after little work and movement.</td>
<td>Sweating after little work and movement.</td>
<td>Profuse sweating after little work and movement.</td>
<td>Sweating even at rest or in cold season.</td>
</tr>
<tr>
<td>2</td>
<td>Hrudrava</td>
<td>Absence of Palpitations</td>
<td>Palpitations after severe exertion</td>
<td>Palpitations after moderate exertion</td>
<td>Palpitations after mild exertion</td>
<td>Palpitations at rest.</td>
</tr>
<tr>
<td>---</td>
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<td>----------------------------------</td>
<td>-------------------------------------</td>
<td>-------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>3</td>
<td>Shwaskruchata</td>
<td>Dyspnoea after heavy work but relived soon and up to tolerance.</td>
<td>Dyspnoea after moderate work but relived later and up to tolerance.</td>
<td>Dyspnoea after little work but relived later and up to tolerance.</td>
<td>Dyspnoea after little work but relived later and beyond tolerance.</td>
<td>Dyspnoea in resting condition.</td>
</tr>
<tr>
<td>4</td>
<td>Atikshudha</td>
<td>Lunch+dinner+light breakfast</td>
<td>Lunch+dinner+heavy breakfast</td>
<td>Lunch+dinner+2 heavy breakfast</td>
<td>Lunch+dinner+2 heavy breakfast</td>
<td>Even with 2 heavy breakfast lunch and dinner falls hungry</td>
</tr>
<tr>
<td>5</td>
<td>Nidradhikya</td>
<td>Normal sleep 6-7 hrs</td>
<td>Sleep up to 8 hrs/day with anga gaurav</td>
<td>Sleep to 8 hrs/day with anga gaurav and jrimbha</td>
<td>Sleep up to 10 hrs/day with tandra</td>
<td>Sleep up to 10 hrs/day with tandra</td>
</tr>
<tr>
<td>6</td>
<td>Daurgandhya</td>
<td>Absence of smell</td>
<td>Occasional bad smell from the body which removed after bath</td>
<td>Persistent bad smell difficult to suppress with deodorants</td>
<td>Persistent bad smell felt from long distance and is not suppressed by deodorants</td>
<td>Persistent bad smell felt from long distance even intolerable to the patient himself.</td>
</tr>
<tr>
<td>7</td>
<td>Alasya</td>
<td>Doing work satisfactorily with proper vigor</td>
<td>Doing work satisfactorily under mental pressure and takes</td>
<td>Doing work satisfactorily under mental pressure and takes</td>
<td>Doing work very slowly</td>
<td>Does not take initiation and does</td>
</tr>
</tbody>
</table>
8. Atitrushna  
   Normal thirst  
   Up to 1 liter excess intake of water  
   1-2 liters excess intake of water  
   2-3 liters excess intake of water  
   More than 3 liters intake of water

9. Daurbalya  
   Can do routine work  
   Can do moderate exercise without difficulty  
   Can do only mild exercise  
   Can do mild exercise with very difficulty  
   Cannot do even mild exercise.

Table no.2

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Drugs</th>
<th>Latin name</th>
<th>Part used</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Amalaki</td>
<td>Phyllanthus emblica</td>
<td>fruit</td>
<td>1 Part</td>
</tr>
<tr>
<td>2.</td>
<td>Hareetaki</td>
<td>Terminalia chebula</td>
<td>fruit</td>
<td>1 Part</td>
</tr>
<tr>
<td>3.</td>
<td>Bibhitaki</td>
<td>Terminalia belerica</td>
<td>fruit</td>
<td>1 Part</td>
</tr>
<tr>
<td>4.</td>
<td>Shunthi</td>
<td>Zingiber officinalie</td>
<td>Rhizome</td>
<td>1 Part</td>
</tr>
<tr>
<td>5.</td>
<td>Maricha</td>
<td>Piper nigrum</td>
<td>fruit</td>
<td>1 Part</td>
</tr>
<tr>
<td>6.</td>
<td>Pippali</td>
<td>Piper longum</td>
<td>fruit</td>
<td>1 Part</td>
</tr>
<tr>
<td>7.</td>
<td>Vidanga</td>
<td>Embelia ribes</td>
<td>fruit</td>
<td>1 Part</td>
</tr>
<tr>
<td>8.</td>
<td>Chitrak</td>
<td>Plumbago Zeylanica</td>
<td>Root</td>
<td>1 Part</td>
</tr>
</tbody>
</table>
Table no. 3

<table>
<thead>
<tr>
<th>Duration of therapy</th>
<th>6 months</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dose</strong></td>
<td>2 tablets (each 500mg) thrice a day</td>
</tr>
<tr>
<td><strong>Time</strong></td>
<td>After food.</td>
</tr>
<tr>
<td><strong>Anupan</strong></td>
<td>Koshna jala</td>
</tr>
<tr>
<td><strong>Follow up</strong></td>
<td>Clinical symptoms assessed after every 15 days Lipid profile was repeated every month.</td>
</tr>
<tr>
<td><strong>Diet</strong></td>
<td>Advised to have usual diet</td>
</tr>
</tbody>
</table>

Table no. 4

<table>
<thead>
<tr>
<th>Biochemical Parameters</th>
<th>Mean score</th>
<th>% Relief</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BT</td>
<td>AT</td>
<td></td>
</tr>
<tr>
<td>Sr.Cholesterol</td>
<td>275.932</td>
<td>200.832</td>
<td>27.22</td>
</tr>
<tr>
<td>Sr.Triglycerides</td>
<td>202.54</td>
<td>120</td>
<td>40.75</td>
</tr>
<tr>
<td>Sr.HDL</td>
<td>32.463</td>
<td>48.6</td>
<td>50.12</td>
</tr>
<tr>
<td>Sr.LDL</td>
<td>200.509</td>
<td>126.207</td>
<td>37.06</td>
</tr>
<tr>
<td>CHO/HDL</td>
<td>8.510</td>
<td>4.147</td>
<td>51.28</td>
</tr>
<tr>
<td>LDL/HDL</td>
<td>6.260</td>
<td>2.647</td>
<td>57.73</td>
</tr>
<tr>
<td>VLDL</td>
<td>40.5025</td>
<td>25.976</td>
<td>40.74</td>
</tr>
</tbody>
</table>